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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,481	09/02/2003	Kazuo Hakamata	Q77240	2062

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EXAMINER

ROSENBERGER, FREDERICK F

ART UNIT PAPER NUMBER

2878

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/652,481

Applicant(s)

HAKAMATA, KAZUO

Examiner

Frederick F. Rosenberger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/26/04 and 9/2/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Own Admission of Prior Art (hereinafter referred to as AOAPA), Kawajiri et al. (US Patent # 4,922,103), and Nakata et al. (US Patent # 5,477,438).

AOAPA discloses a line light source system for projecting a reading light beam onto an image recording medium, either an electrostatic recording medium (page 1, lines 9-24) or a stimuable phosphor sheet. The line light source consists of a linear array of light emitting diodes (LEDs) (shown in Figure 8B as element **101a**). Optical means for converging light from the source in a direction perpendicular to the longitudinal direction of the source are provided in the form of cylindrical lenses **104** and **105** in Figure 8B.

However, AOAPA is silent with regards to a pinhole array for limiting the divergence angle of the light from the source.

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Kawajiri et al. teach a light-shielding layer **19** (shown in Figure 5A) adjacent to a linear light source **21**, which has small holes (column 7, lines 56-59), thus comprising a pinhole array, which would provide a divergence angle within the claimed range of claim 6. Nakata et al. teach that the use of pinholes aligned with an array of semiconductor light elements can be used to provide a more uniform optical power (see abstract).

Thus, it would have been obvious for a person having ordinary skill in the art to modify AOAPA to include a pinhole array for improving the optical performance of the line light source system, as taught by Kawajiri et al. and Nakata et al.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over AOAPA, Kawajiri et al., and Nakata et al., as applied to claim 6 above, and further in view of Kohda (US Patent # 6,710,365) and the "GRIN and SELFOC" info sheet from the NSG America website (hereinafter referred to as NSG).

The combination of AOAPA, Kawajiri et al., and Nakata et al. disclose all of the limitations of the parent claim 6, as discussed above. However, AOAPA, Kawajiri et al., and Nakata et al. do not disclose the use of a refractive index profile type lens array as the optical element for limiting the angle of divergence of the light. The combination of AOAPA, Kawajiri et al., and Nakata et al. accomplish this through the use of an array of pinholes.

Kohda teaches the use of a refractive index profile lens array **15** (Figure 1B), in the form of an array of SELFOC lenses, that converges the stimulating light beam **R** onto a stimuable phosphor sheet **50**, thereby limiting the angle of divergence of the

propagating rays. The array **15** also acts to collimate emitted light **M** from the stimuable phosphor sheet to the detector **20**.

NSG teaches that graded index lenses, such as the SELFOC lenses, are advantageous because the varying index of refraction within the lens material allows for a more simple, compact lens geometry compared with traditional focusing lenses.

Thus it would have been obvious for a person having ordinary skill in the art to modify the combination of AOAPA, Kawajiri et al., and Nakata et al. to use a refractive index profile type lens array as the optical element limiting divergence of the light emitted by the line light source, as taught by Kohda and NSG.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yasuda (US Patent # 6,798,440) discloses an image recording apparatus using a line light source to image on a recording media. A pair of cylindrical lenses is coupled with an array of refractive index profile lenses to focus the light output from each LED of the line light source onto the recording media.

Shoji (US Patent # 6,787,790) disclose that scanning image information read-out systems are typically applied for retrieval of information from X-ray image recording media, such as an electrostatic recording medium, a stimuable phosphor sheet, or the like (column 1, lines 55-63).

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick F. Rosenberger whose telephone number is 571-272-6107. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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